Nokia Customer Care

Service Manual

RM-469; RM-481; RM-482; RM-483 (Nokia E52; Nokia E55; L3&4)

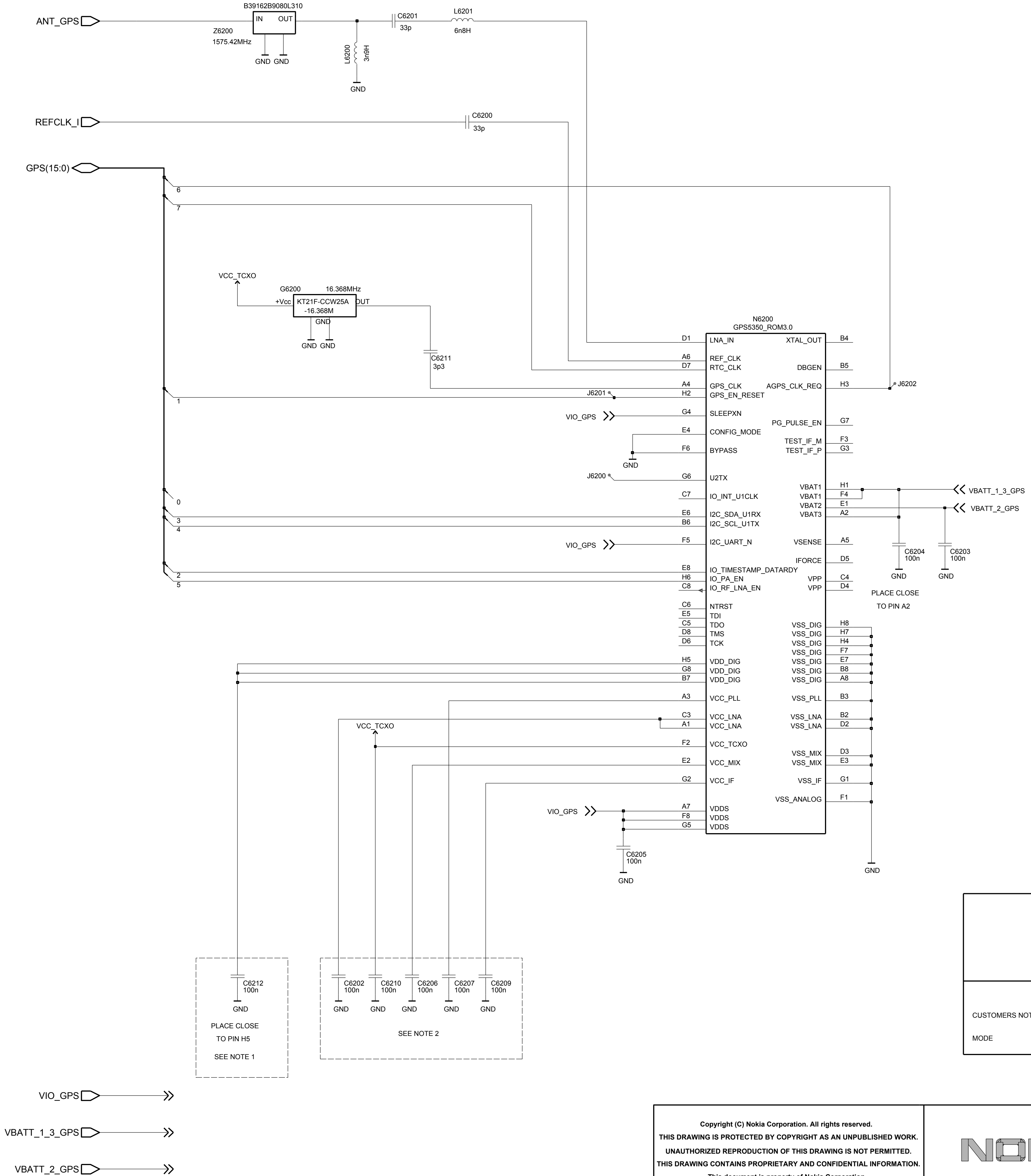
Schematics

Part No: (Issue 1)

COMPANY CONFIDENTIAL

NOKIA
Care

GPS COST 4.0



NOTES

1)TRACK INDUCTANCE FROM VDD_DIG, N6200-H5 TO C6212 MUST BE 1nH MAX.

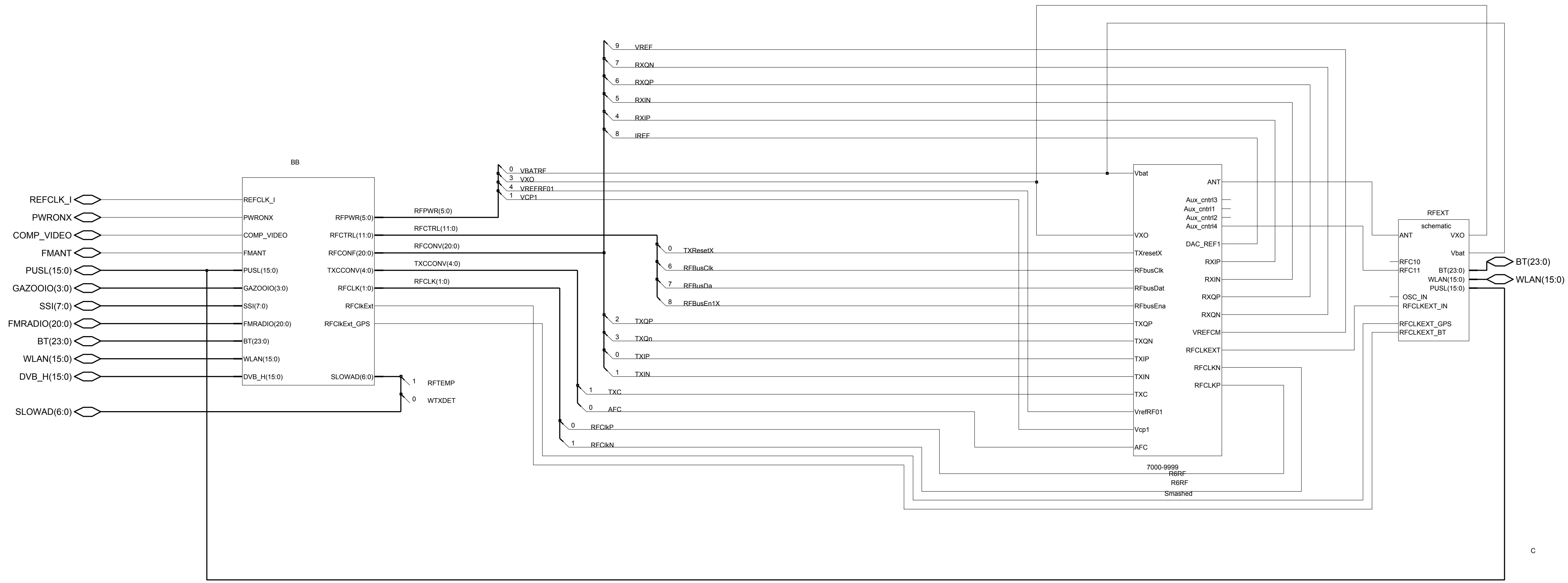
2)TRACK INDUCTANCE FROM VCC_XXX, N6200 TO DECOUPLING CAPS MUST BE 1nH MAX.

MODE	CONNECT N6200 (PIN)	TO
CUSTOMERS NOT USING PA BLANKING MODE	IO_PA_EN	GND (PREVENTS FLOATING INPUT)

REF RANGE = 6200-6299

Name GPS COST 4.0

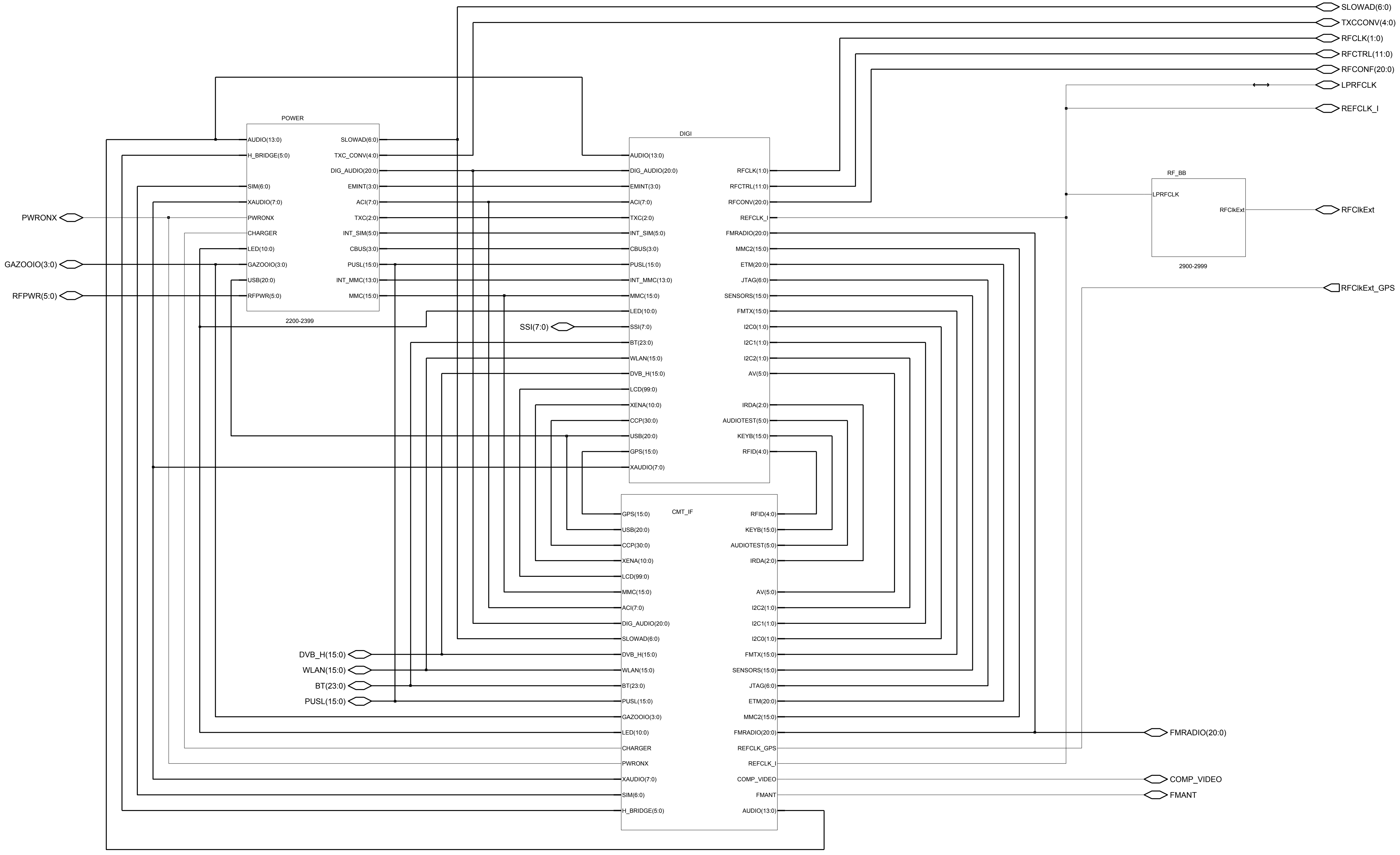
Appr



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Name CMT ENGINE

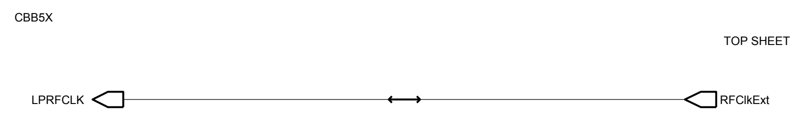
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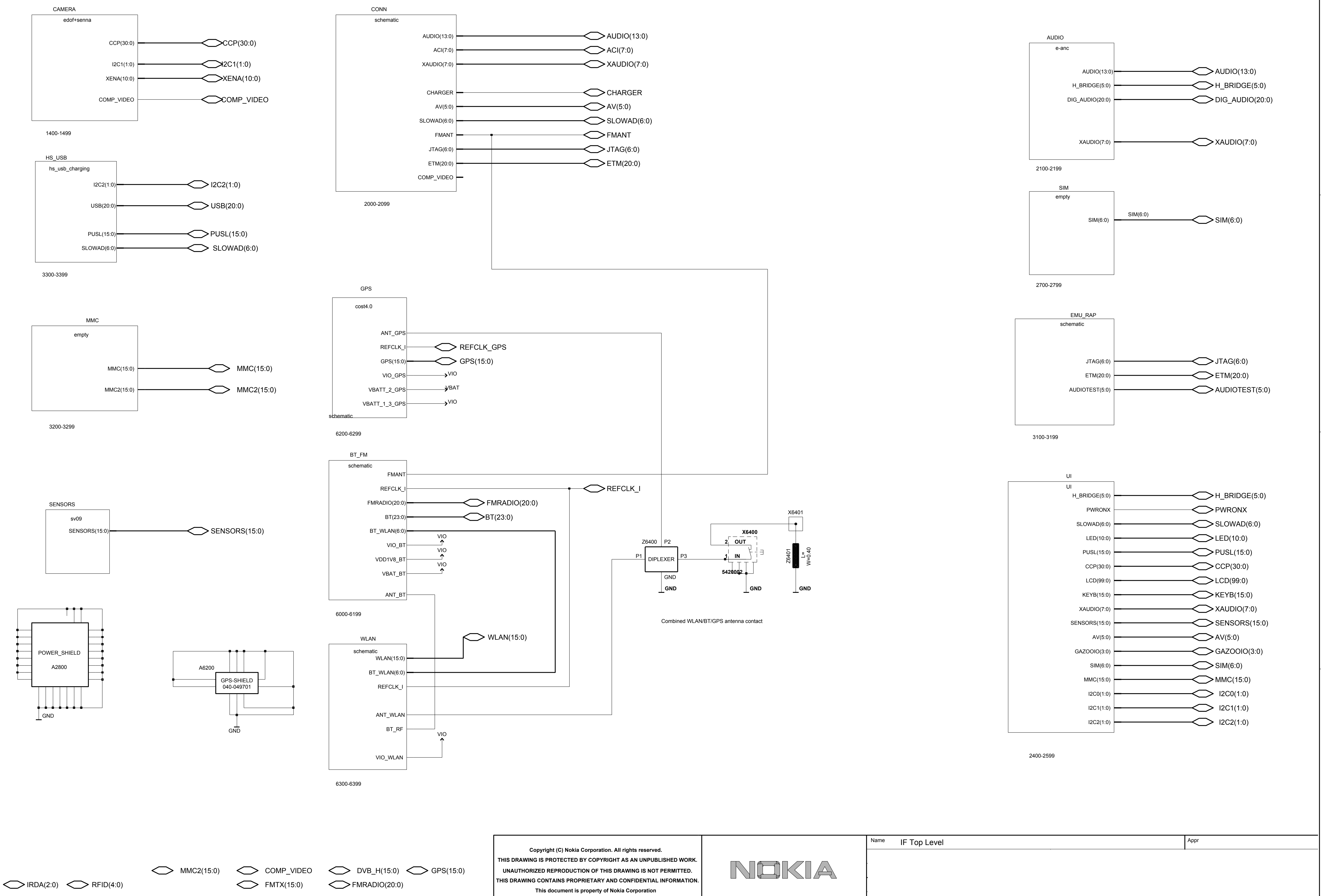
Name: BB TOP LEVEL

Appr



Name RF_BB

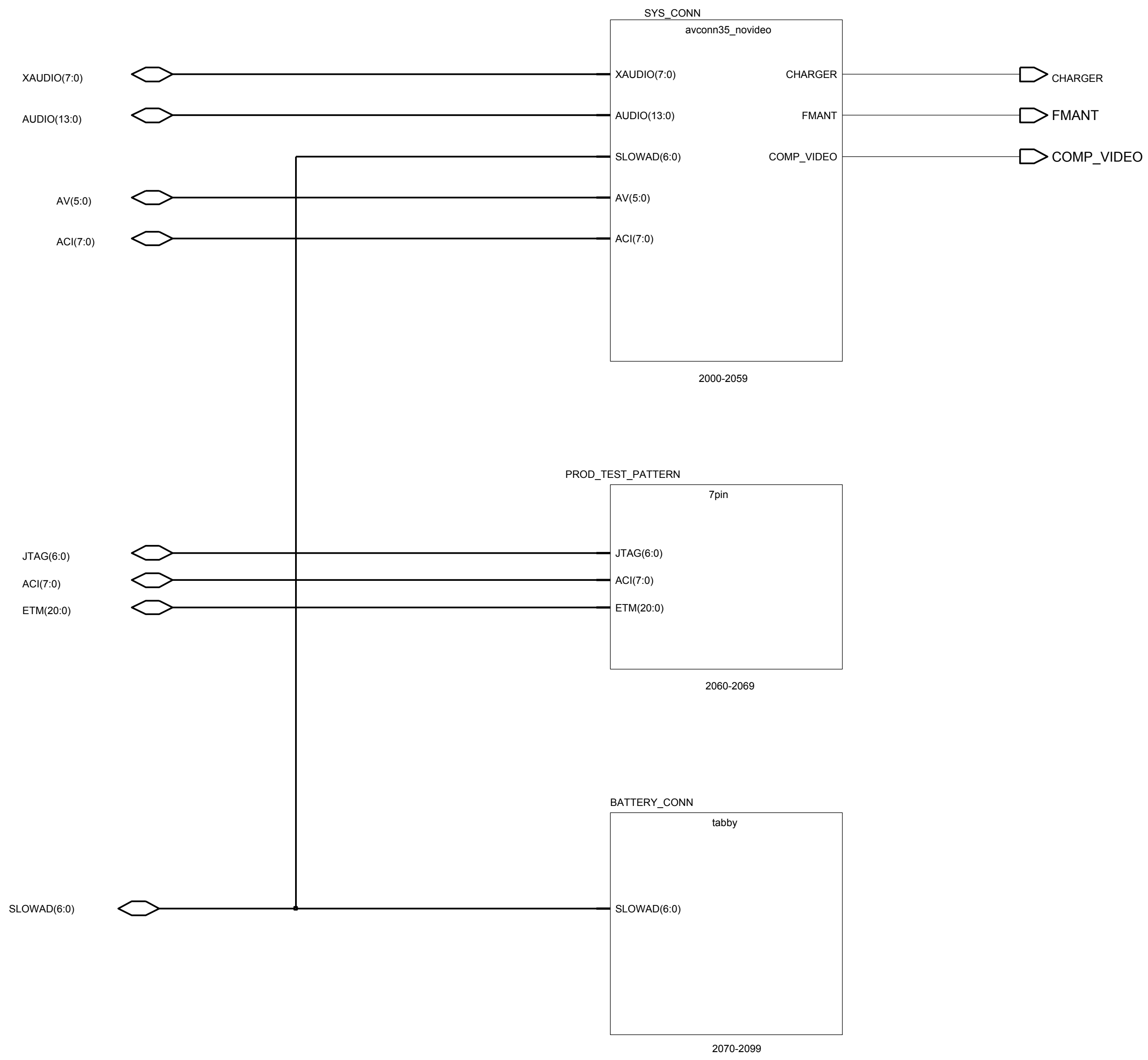
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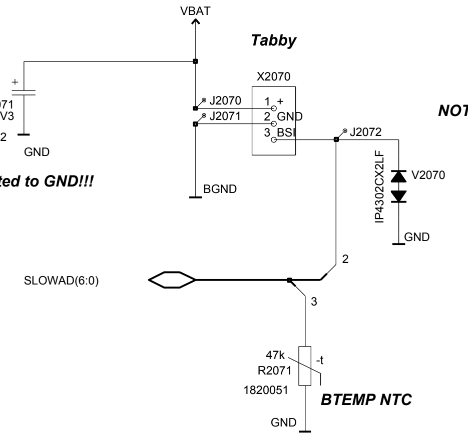
Name IF Top Level

Appr



Name: System and battery connector

Appr

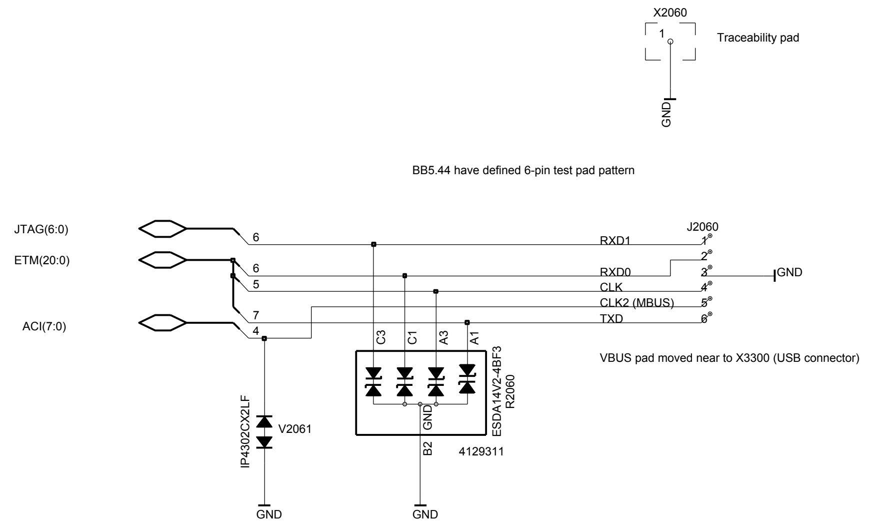


NOTE !! BYPASS CAP connected to GND!!!

NOTE !! R2070 IS NEEDED IF GAZOO IS FAR FROM BATTERY CONNECTOR !!!
PLACE R2070 NEAR BATTERY CONNECTOR !!!

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Name	Battery Connector	Appr

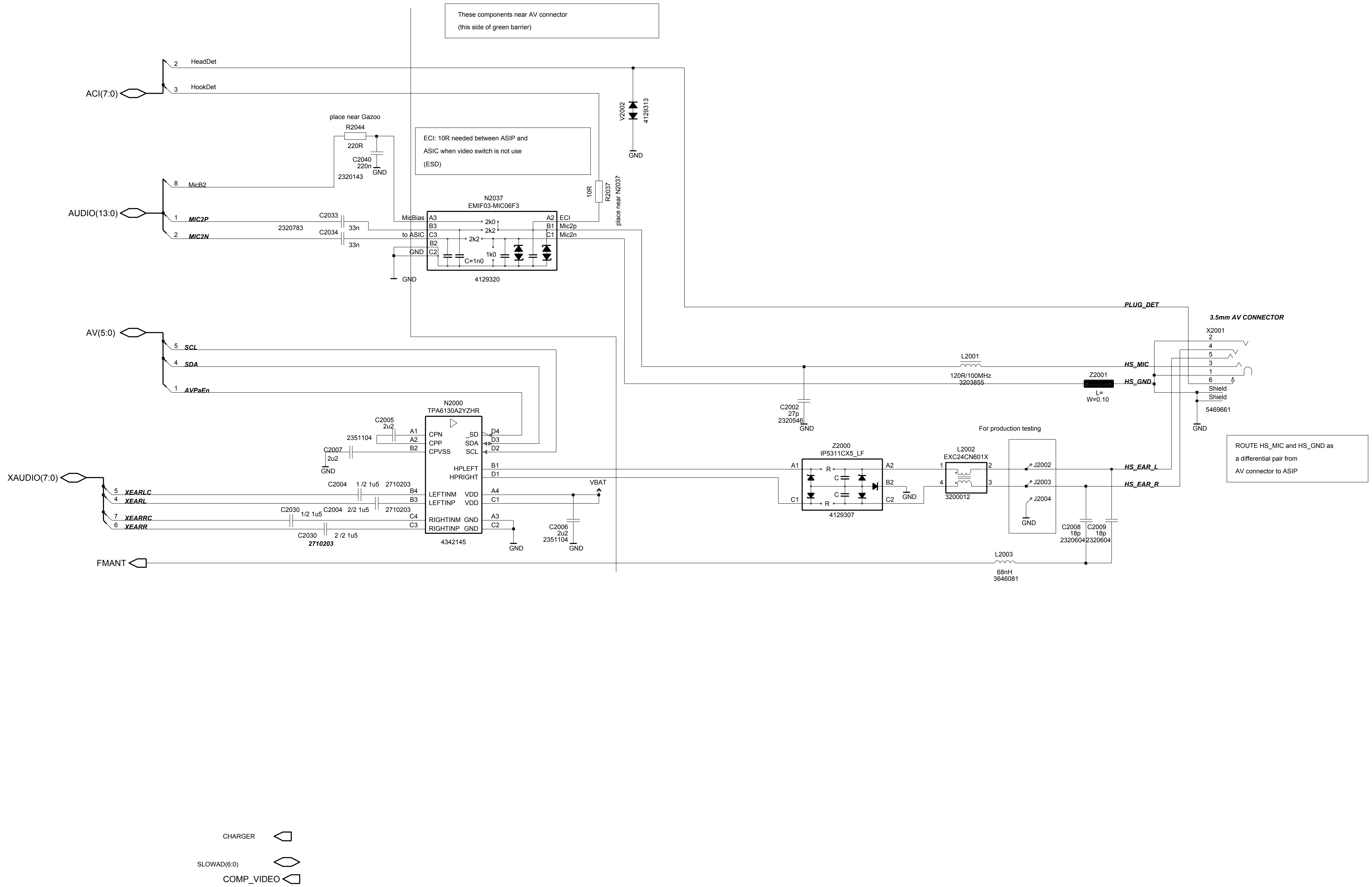


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Name: Production test pad

Appr

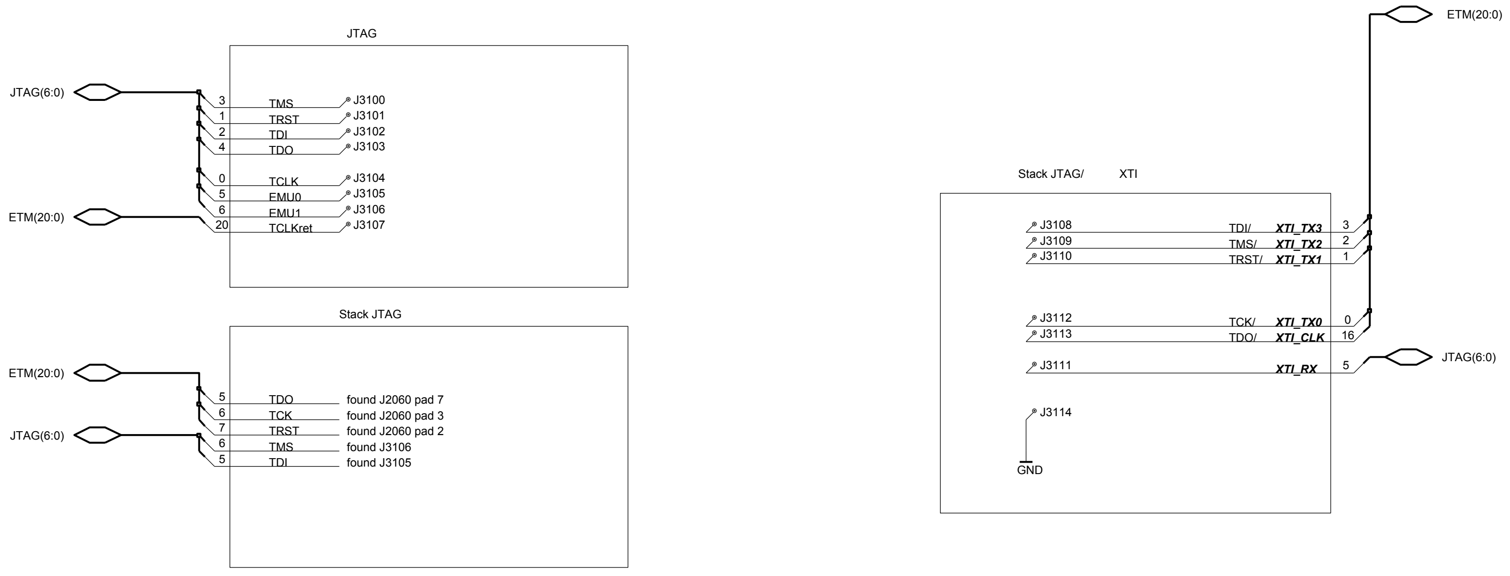
USB charging only



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Name AV-CONNECTOR

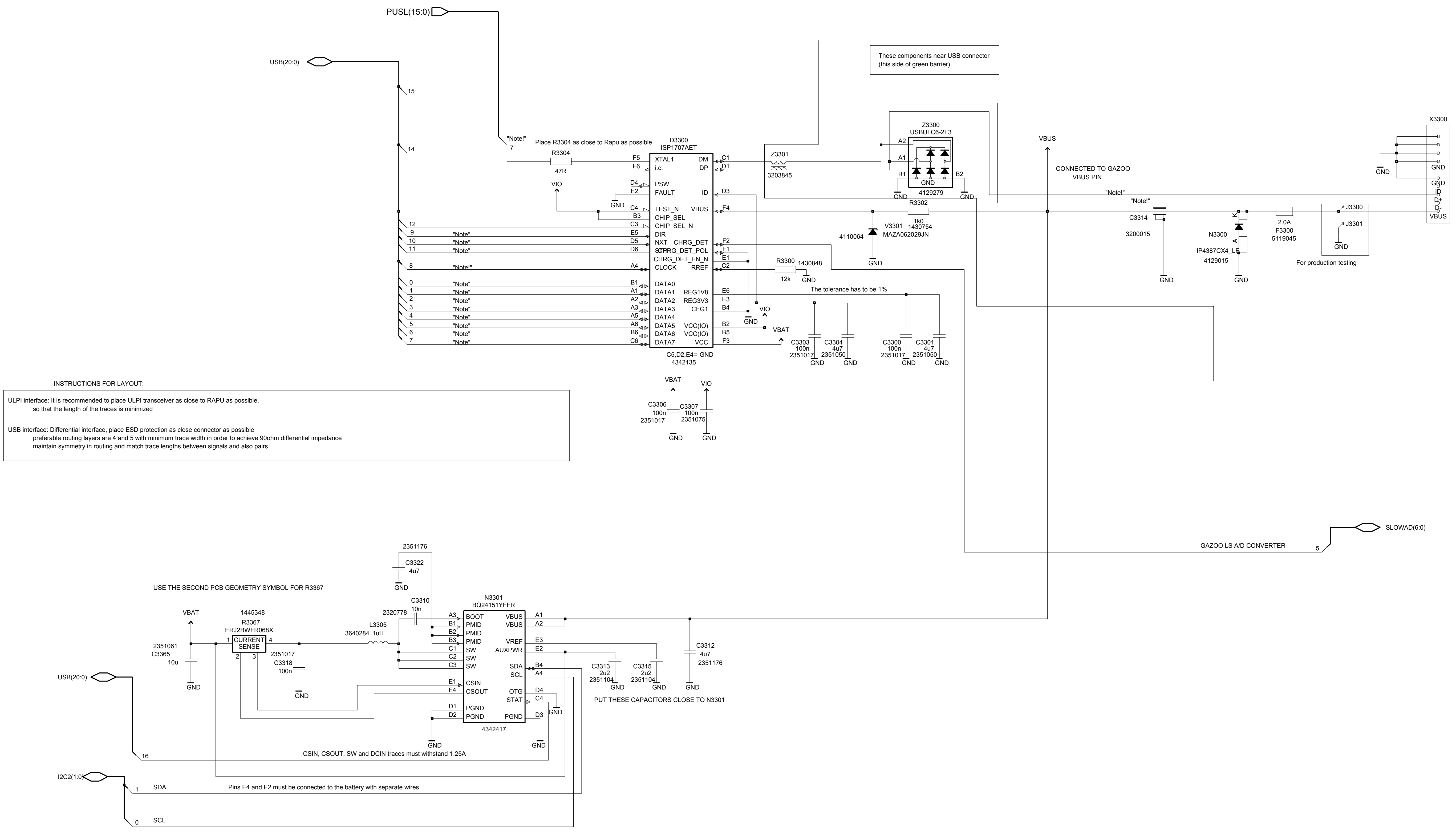
Appr



AUDIOTEST(5:0)

Name: Test Interface

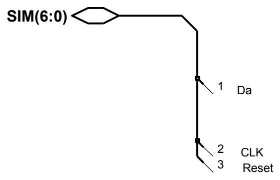
Appr



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Name: HS USB

Appr



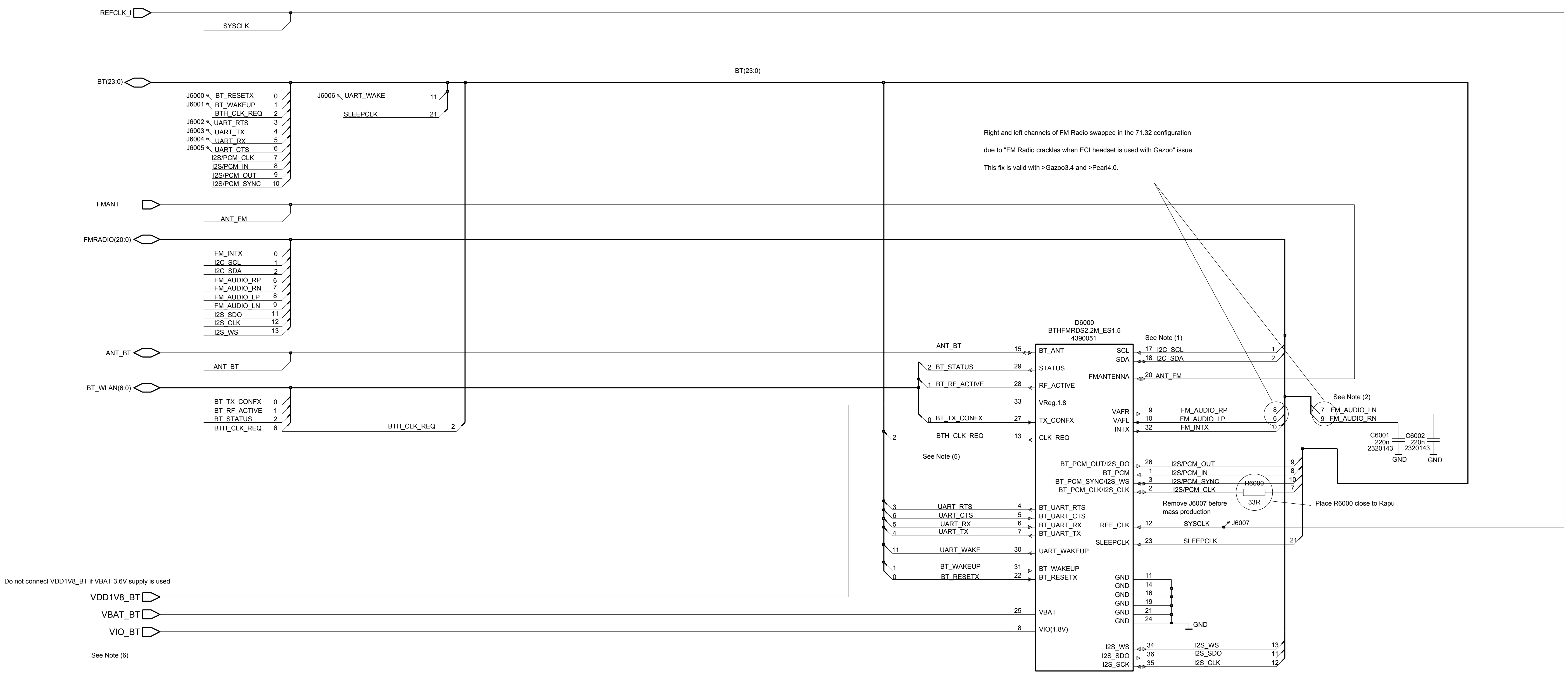
11

NOKIA

Name SIM interface

Appr

BLUETOOTH & FM RADIO MODULE WITHOUT RF FILTER



Notes

(1) 3k3 Pull-up Resistors are required on I2C_SCL, I2C_SDA.

(2) C6001 and C6002 should be placed in the Bluetooth area, so that the differential audio lines to Retu ASIC are equal length.

(3) D6000 BTHFMRDS2.1M_WLAN module includes an internal dc blocking capacitor between BT_ANT (pin 15) and ASIC BT_ANT RF terminal.

(4) Additional components for phone wing boards are given in BTHFMRDS2.1_TEST release

(5) Pull-down is required on BTH_CLK_REQ signal (see release note)

(6) For 3.6V supply voltage connect VBAT_BT input to VBAT 3.6V supply, VDD1V8_BT input must be Not Connected

For 1.8V supply voltage connect VDD1V8_BT and VBAT_BT inputs to 1.8V supply

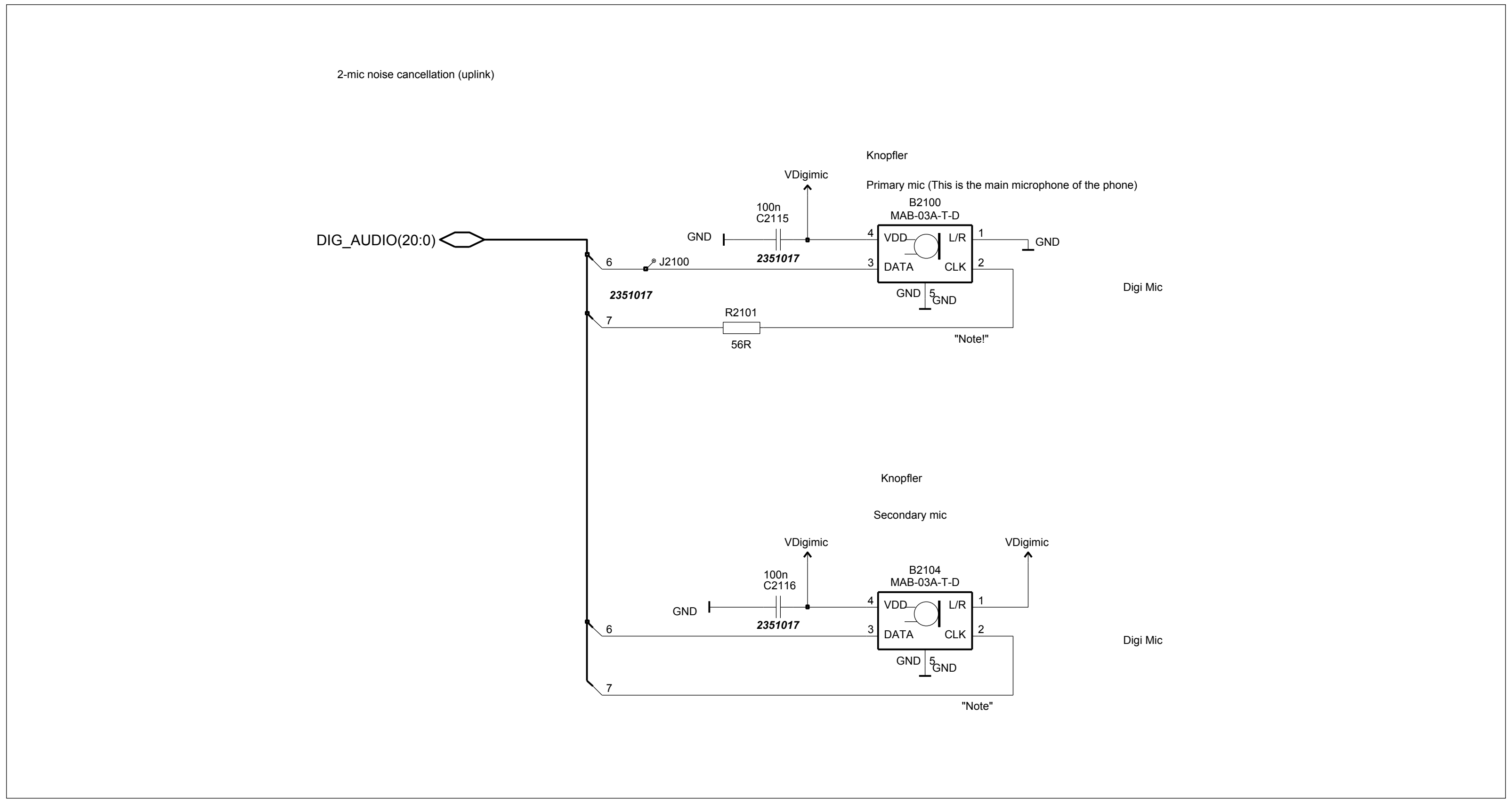
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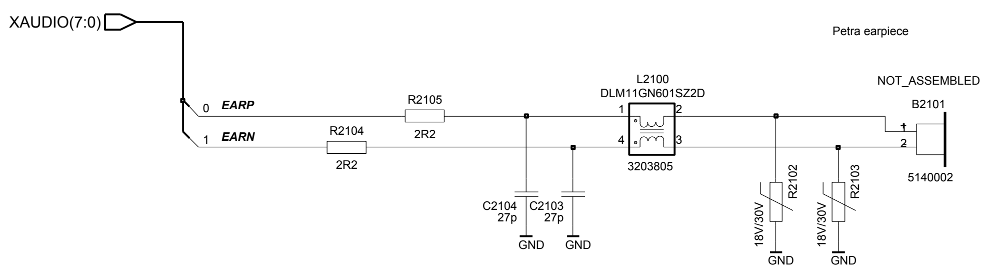
Name: Bluetooth - FM

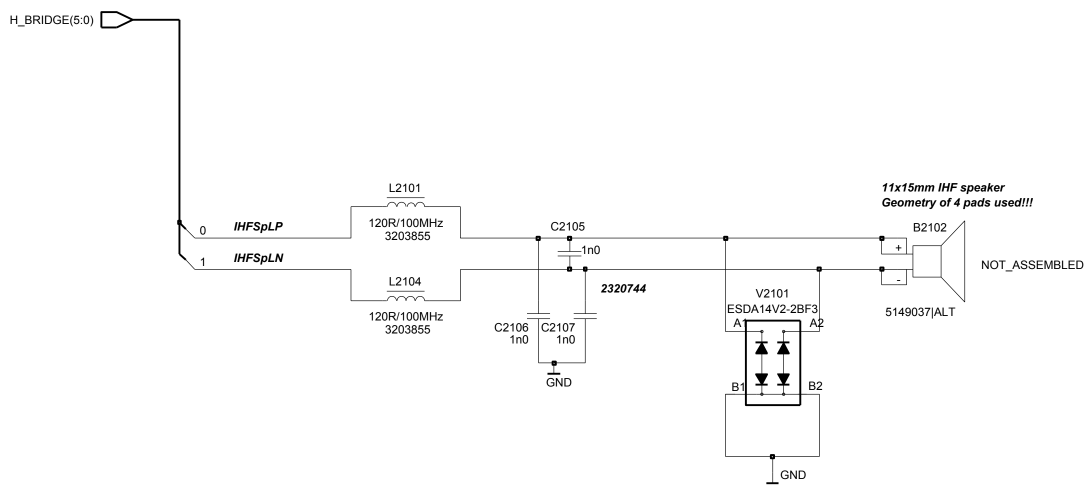
Appr

INSTRUCTIONS FOR LAYOUT:

AudioClk/DigiMicClk: Shield AudioClk trace from every direction in order to avoid crosstalk injected to it.
If AudioClk is shared from RAPU to both Gazoo and DigiMic then it is recommended to put termination resistors in the beginning of both traces (Values have to be defined case by case with simulations)



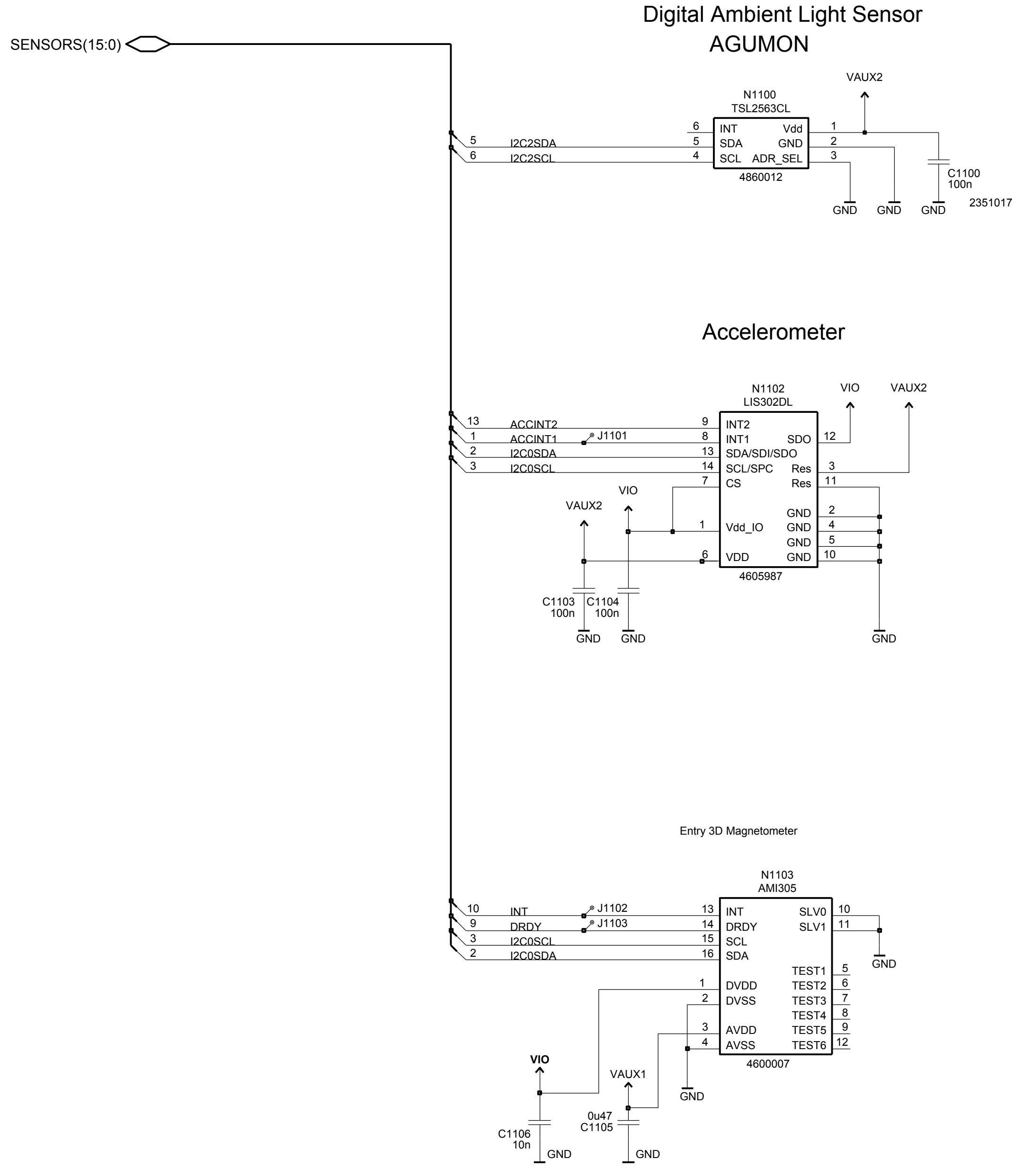




AUDIO(13:0)

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Name	AUDIO	Appr



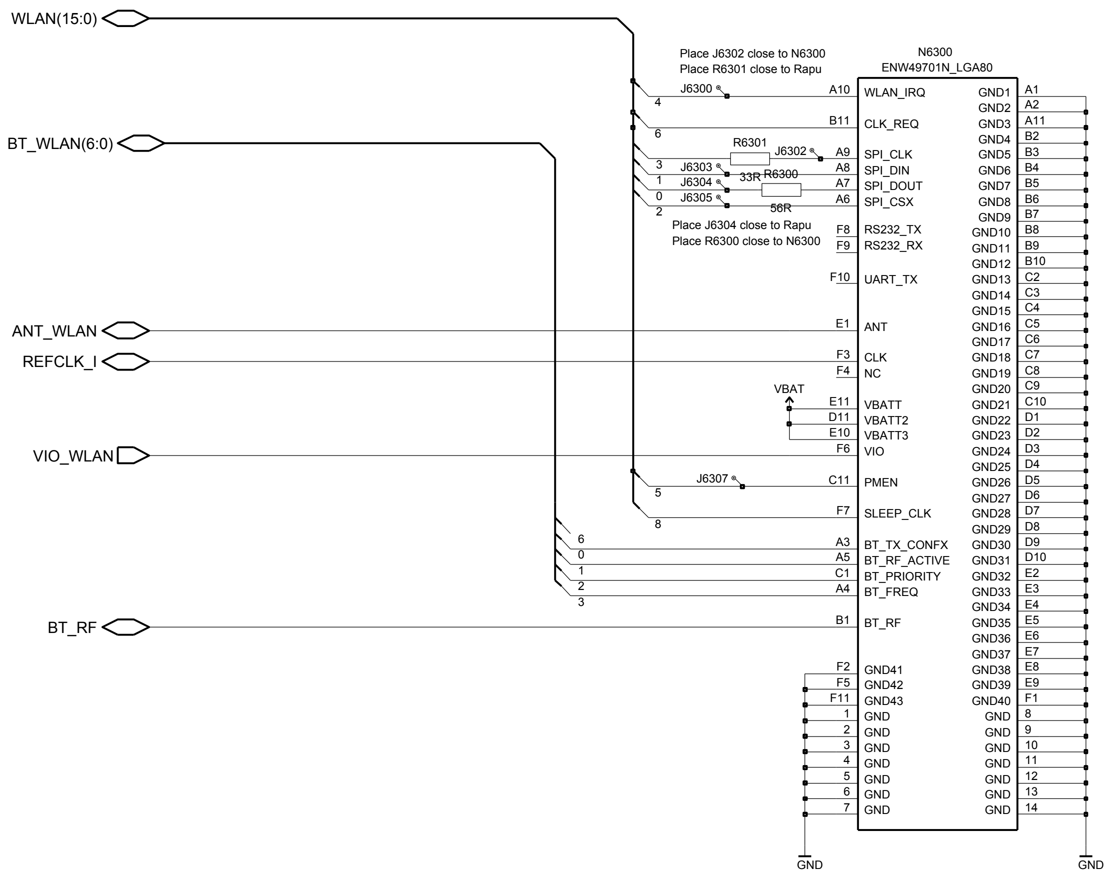
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Name SENSORS HW71

Appr

REFS 6300-6399

WLAN SIZE 4.0

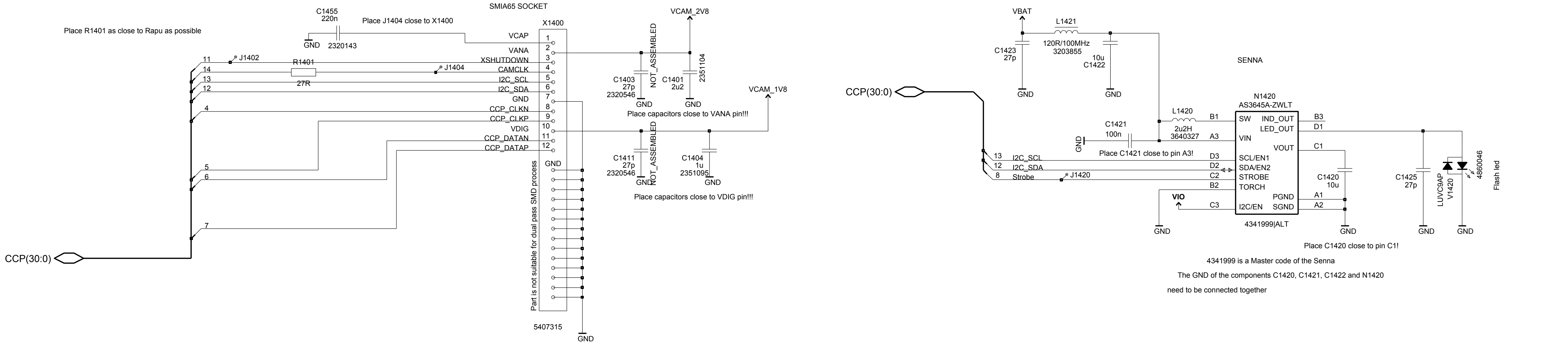


NOTE:- ALL TEST POINTS ARE OPTIONAL
HOWEVER THE FOLLOWING ARE
RECOMMENDED FOR CUSTOMER CARE.
J6301, J6302, J6306 & J6307

NOKIA

Name	WLAN	Appr

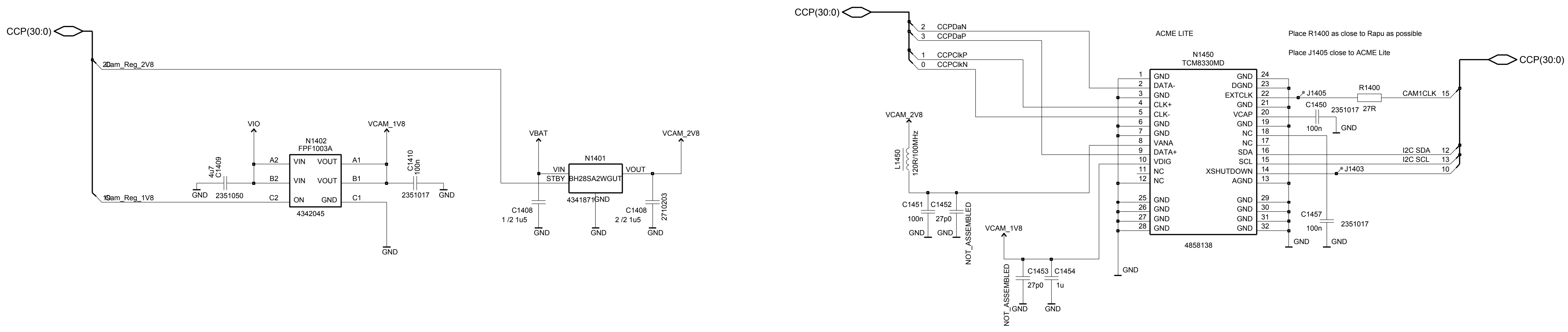
3.2MPIX SMIA65 CAMERA (EDOF) + SENNA + POLARIS 2 FLASH



INSTRUCTIONS FOR LAYOUT:

CCP interfaces: Differential interface, termination resistors as close to RAPU as possible without any stubs,
preferable routing layers are 4 and 5 with minimum trace width in order to achieve 100ohm differential impedance
maintain symmetry in routing and match trace lengths between signals and also pairs

Cam Clks: Shield Cam Clk traces from every direction in order to avoid crosstalk problems

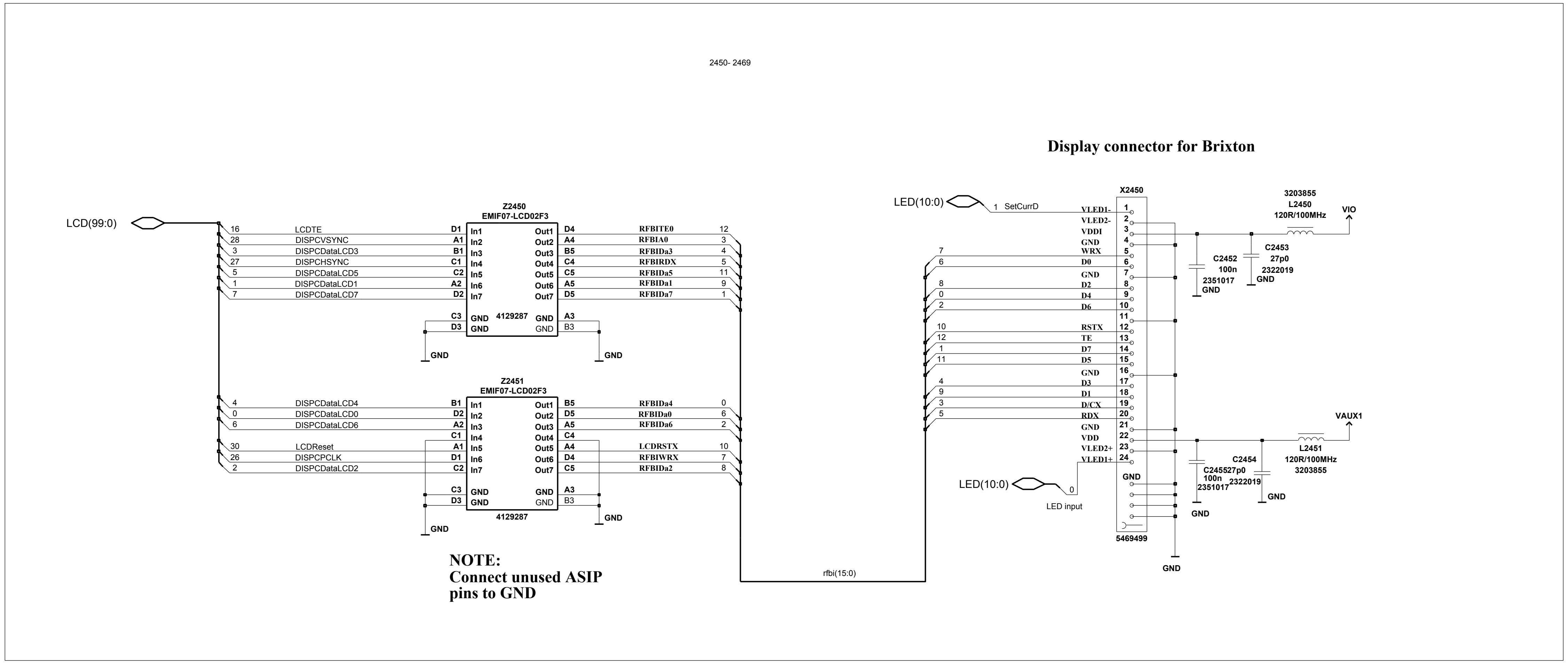


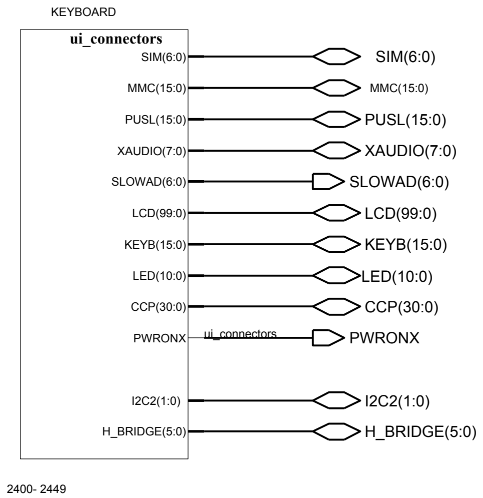
CCP(30:0)
XENA(10:0)
COMP_VIDEO
I2C1(1:0)

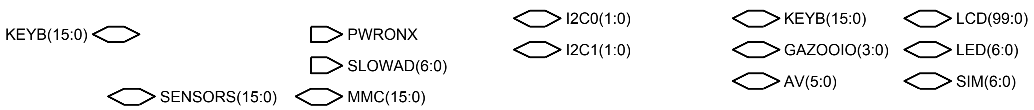
NOKIA

Name: CAMERA HW71 RAPU1.1

Appr





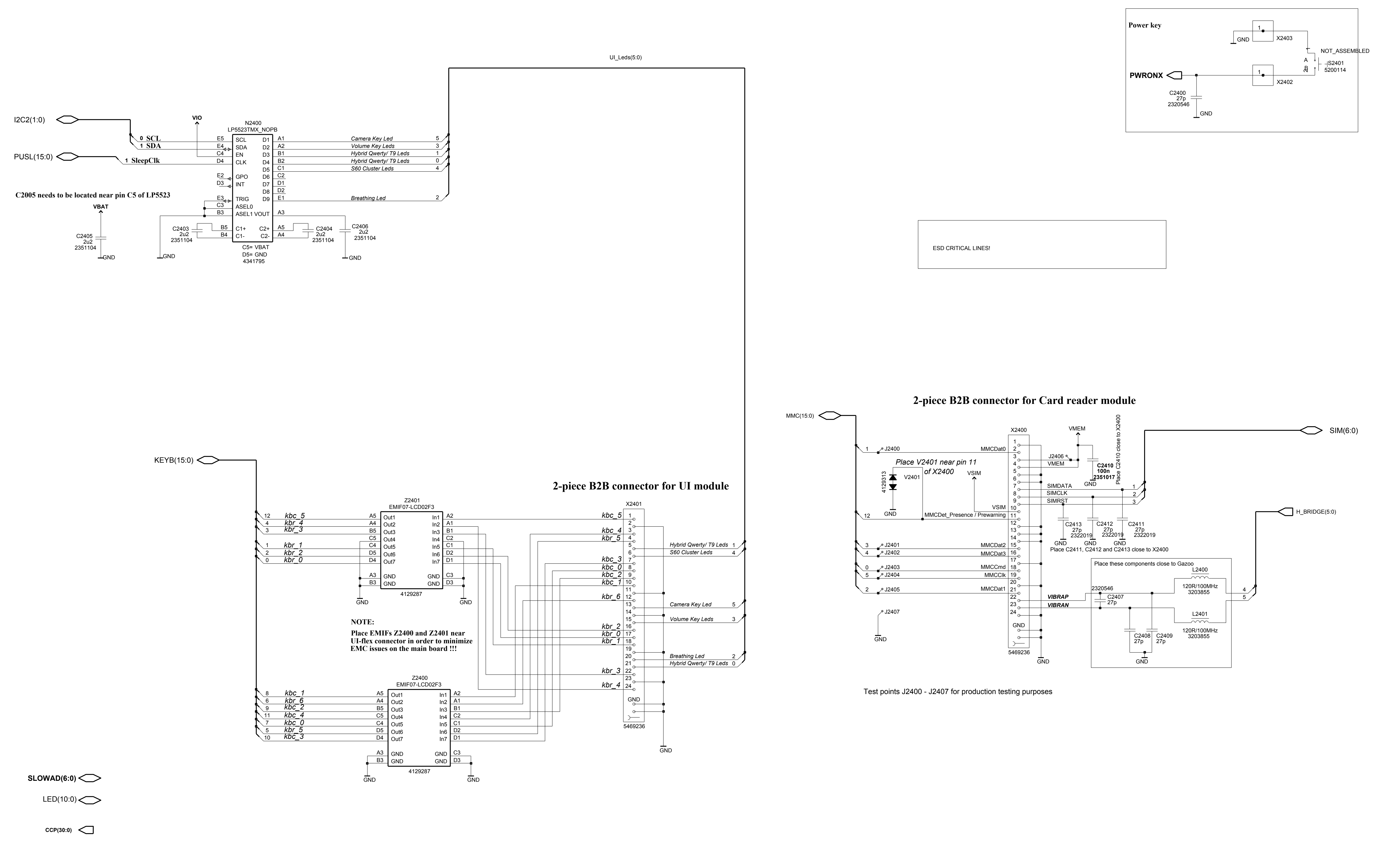


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Name UI

Appr

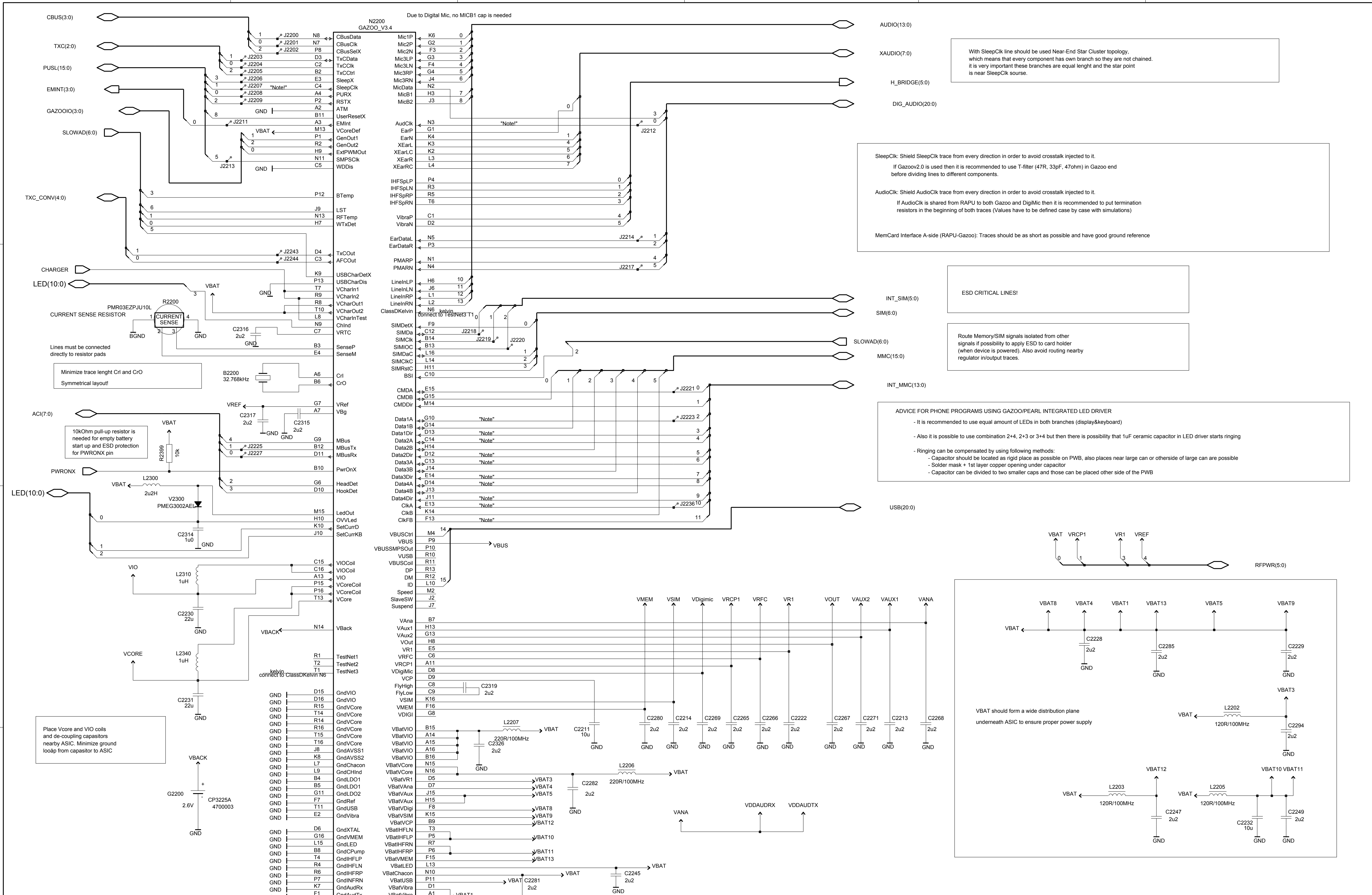
REFERENCE AREA FOR THIS SHEET 2400-2449



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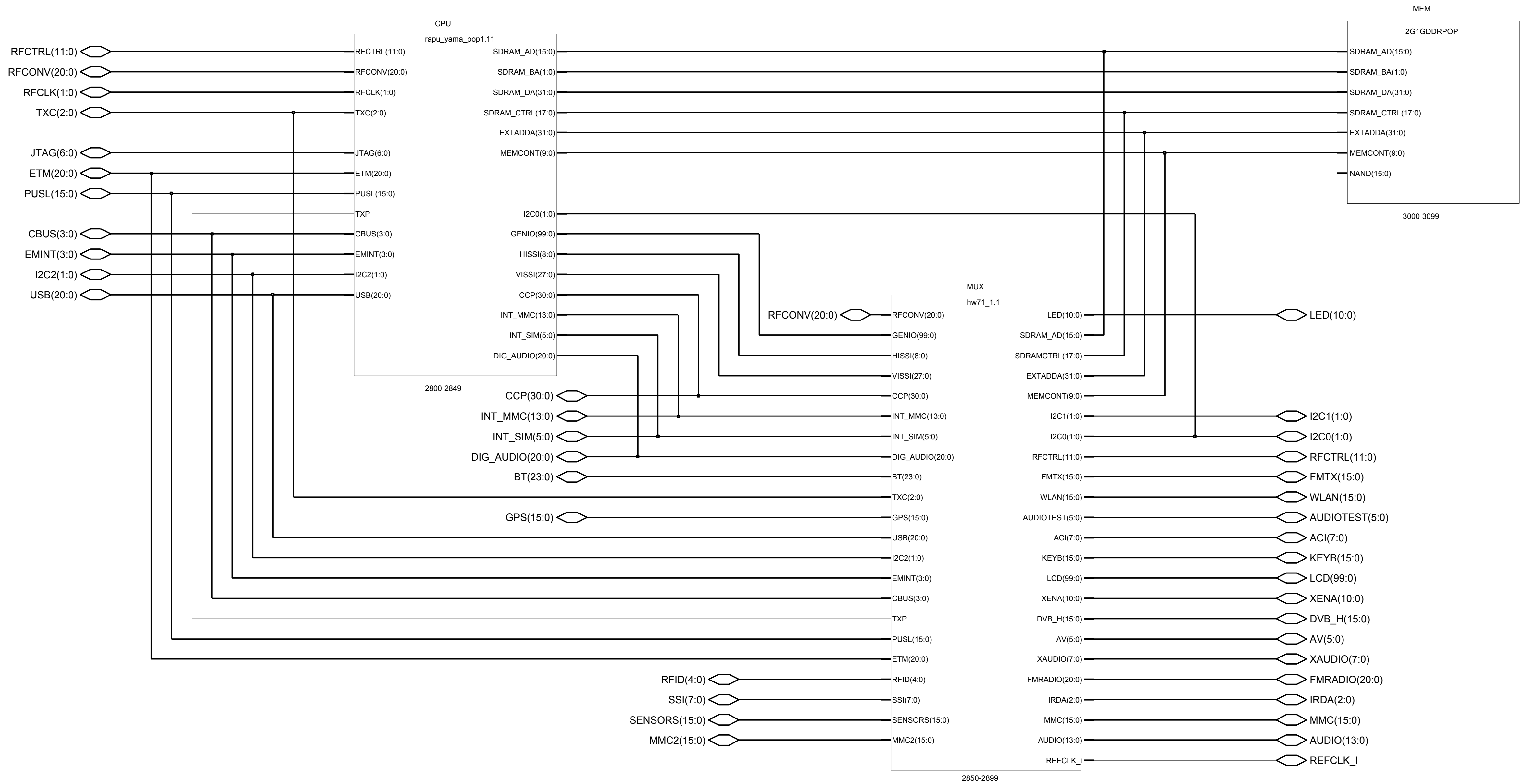
Name: KEYBOARD

Appr



Name GAZOO

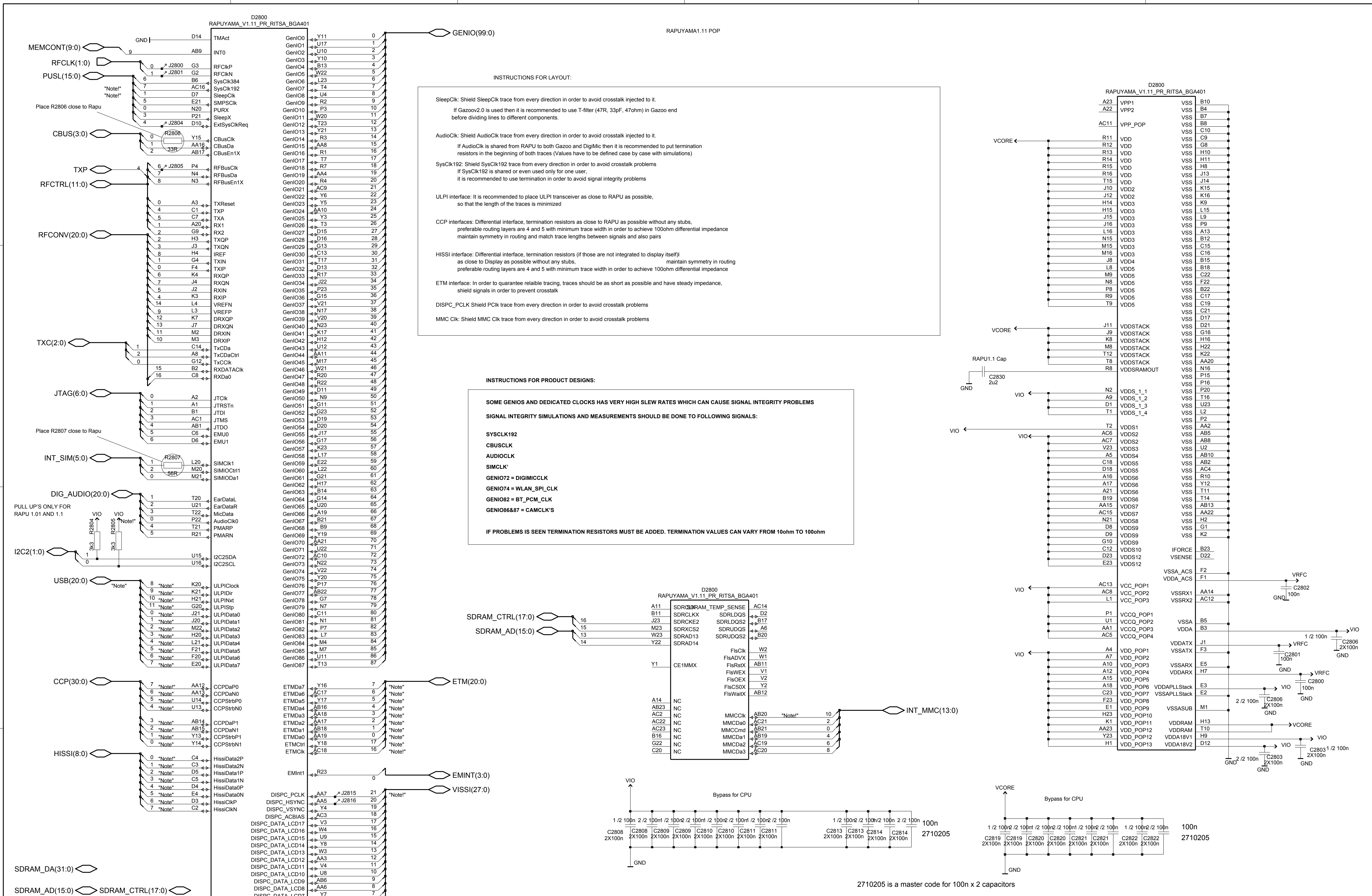
Appr



NOKIA

Name DIGI

Appr



INSTRUCTIONS FOR LAYOUT:

SleepClk: Shield SleepClk trace from every direction in order to avoid crosstalk injected to it.
If Gazoov2.0 is used then it is recommended to use T-filter (47R, 33pF, 47ohm) in Gazoo end before dividing lines to different components.

AudioClk: Shield AudioClk trace from every direction in order to avoid crosstalk injected to it.
If AudioClk is shared from RAPU to both Gazoo and DigiMic then it is recommended to put termination resistors in the beginning of both traces (Values have to be defined case by case with simulations)

SysClk192: Shield SysClk192 trace from every direction in order to avoid crosstalk problems
If SysClk192 is shared or even used only for one user,
it is recommended to use termination in order to avoid signal integrity problems

ULPI interface: It is recommended to place ULPI transceiver as close to RAPU as possible,
so that the length of the traces is minimized

CCP interfaces: Differential interface, termination resistors as close to RAPU as possible without any stubs,
preferable routing layers are 4 and 5 with minimum trace width in order to achieve 100ohm differential impedance
maintain symmetry in routing and match trace lengths between signals and also pairs

HISSI interface: Differential interface, termination resistors (if those are not integrated to display itself)l
as close to Display as possible without any stubs, maintain symmetry in routing
preferable routing layers are 4 and 5 with minimum trace width in order to achieve 100ohm differential impedance

ETM interface: In order to quarantee relaible tracing, traces should be as short as possible and have steady impedance,
shield signals in order to prevent crosstalk

DISPC_PCLK Shield PClk trace from every direction in order to avoid crosstalk problems

MMC Clk: Shield MMC Clk trace from every direction in order to avoid crosstalk problems

INSTRUCTIONS FOR PRODUCT DESIGNS:

SOME GENIOS AND DEDICATED CLOCKS HAS VERY HIGH SLEW RATES WHICH CAN CAUSE SIGNAL INTEGRITY PROBLEMS

SIGNAL INTEGRITY SIMULATIONS AND MEASUREMENTS SHOULD BE DONE TO FOLLOWING SIGNALS:

SYSCLK192
CBUSCLK
AUDIOCLK
SIMCLK'
GENIO72 = DIGIMICCLK
GENIO74 = WLAN_SPI_CLK
GENIO82 = BT_PCM_CLK
GENIO86&87 = CAMCLK'S

IF PROBLEMS IS SEEN TERMINATION RESISTORS MUST BE ADDED. TERMINATION VALUES CAN VARY FROM 10ohm TO 100ohm

2710205 is a master code for 100n x 2 capacitors

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Name: RAPU YAMA POP 1.11

Appr

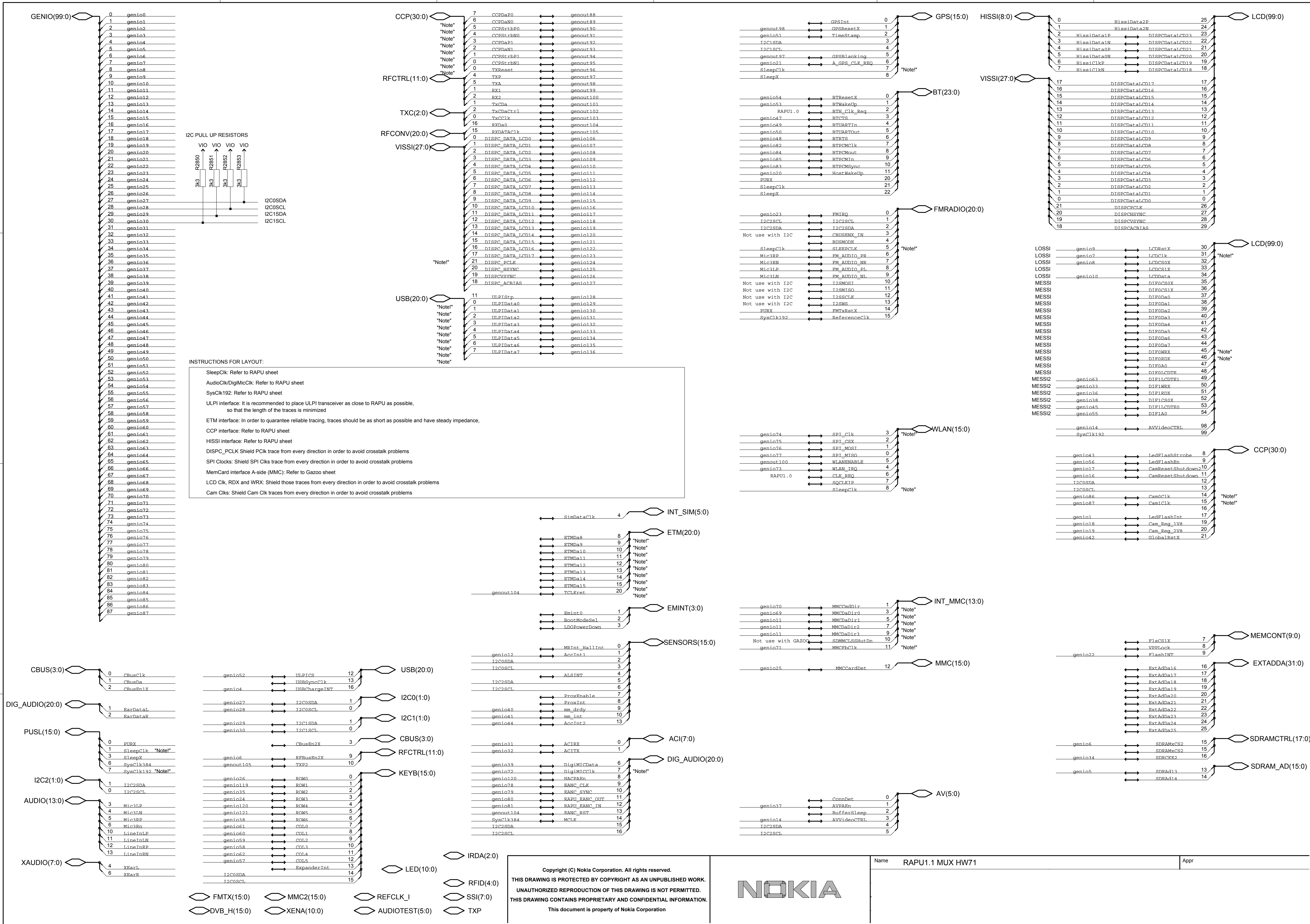
D3000
K5W2G1GACI-AL60
A1 COMBO 32Mx32 DDR
128Mx16 M3
43470S2|NONET

NAND(15:0)
SDRAM_AD(15:0) SDRAM_AD(15:0)
SDRAM_CTRL(17:0) SDRAM_CTRL(17:0)
SDRAM_DA(31:0) SDRAM_DA(31:0)
SDRAM_BA(1:0) SDRAM_BA(1:0)
MEMCONT(9:0) MEMCONT(9:0)
EXTADDA(31:0) EXTADDA(31:0)
NAND(15:0) NAND(15:0)

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Name MEMORY 2G+1GDDR POP

Appr



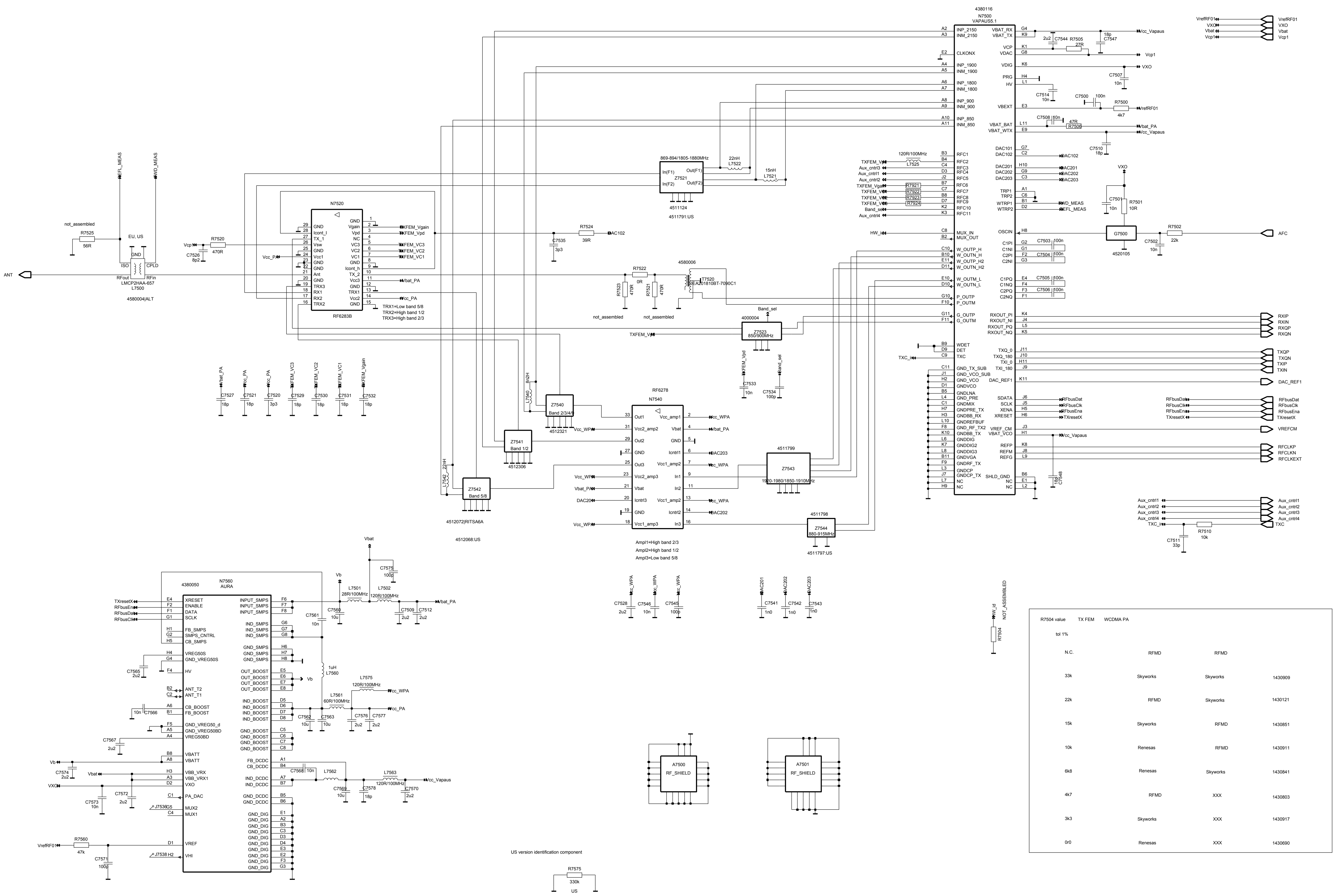
INSTRUCTIONS FOR LAYOUT:

- SleepClk: Refer to RAPU sheet
- AudioClk/DigiMicClk: Refer to RAPU sheet
- SysClk192: Refer to RAPU sheet
- ULPI interface: It is recommended to place ULPI transceiver as close to RAPU as possible, so that the length of the traces is minimized
- ETM interface: In order to quarantee reliable tracing, traces should be as short as possible and have steady impedance,
- CCP interface: Refer to RAPU sheet
- HISSI interface: Refer to RAPU sheet
- DISPC_PCLK Shield PClk trace from every direction in order to avoid crosstalk problems
- SPI Clocks: Shield SPI Clks trace from every direction in order to avoid crosstalk problems
- MemCard interface A-side (MMC): Refer to Gazoo sheet
- LCD Clk, RDX and WRX: Shield those traces from every direction in order to avoid crosstalk problems
- Cam Clks: Shield Cam Clk traces from every direction in order to avoid crosstalk problems

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Name: RAPU1.1 MUX HW71

Appr

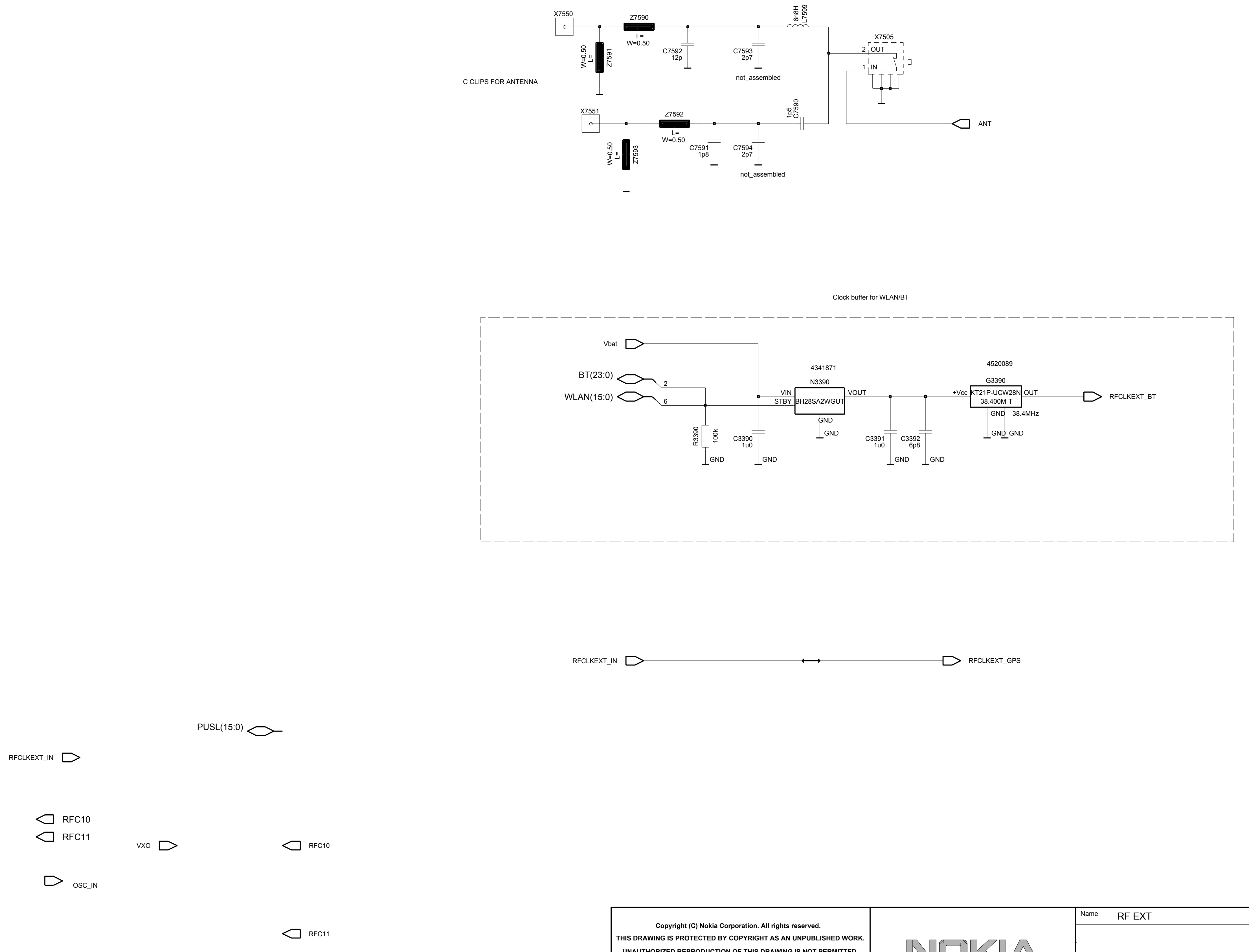


R7504 value	TX FEM	WCDMA PA	
tol 1%			
N.C.	RFMD	RFMD	
33k	Skyworks	Skyworks	1430909
22k	RFMD	Skyworks	1430121
15k	Skyworks	RFMD	1430851
10k	Renesas	RFMD	1430911
6k8	Renesas	Skyworks	1430841
4k7	RFMD	XXX	1430803
3k3	Skyworks	XXX	1430917
0r0	Renesas	XXX	1430690

NOKIA

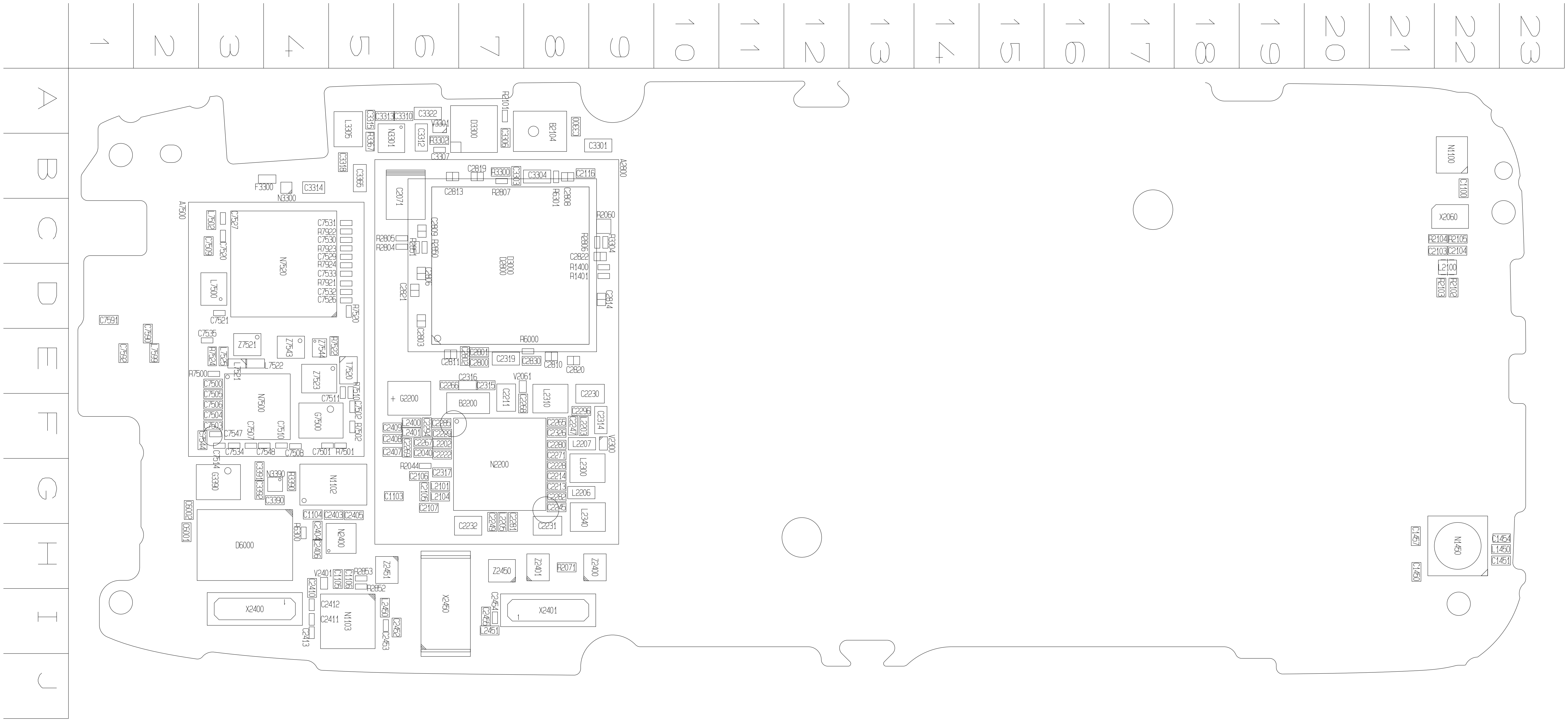
Name RF

Appr

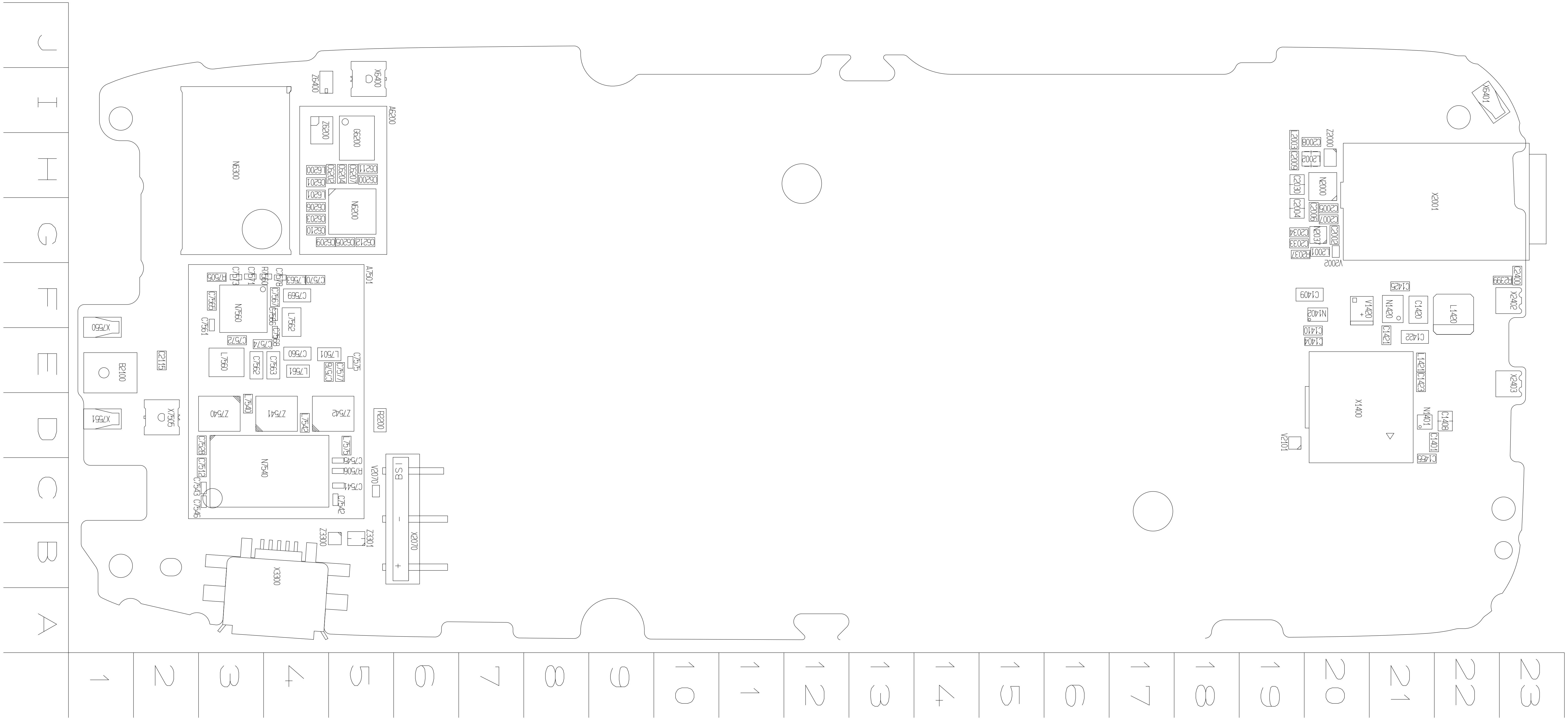


NOKIA

Name	RF EXT	Appr



2rq_06e_asmdrw_t.pdf



2rq_06e_asmdrw_b.pdf